Institutional Repositories: Challenge and Opportunity for LIS Professionals in Digital Age

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Abstract

In the present age of information revolution and ever increasing demand for exact and consolidated information, the functions and old methods followed by traditional libraries are being replaced by new techniques and technologies. Providing access to information free of charge in electronic formats is a concept that is gaining momentum. Open Access is one step ahead of Free Access. Open Access holds promise to remove both price and permission barriers to the scientific communication by using Internet. Creating Institutional Repositories is a step towards open access. The paper provides information about major Institutional Repositories in India.

0. Introduction

The past few years have seen tremendous developments in information production, acquisition, and dissemination. Budgetary restrictions in research libraries have led to a period known as the serial cutting era. The new millennium has also developed the concept of the virtual library with seamless access to an integrated collection of print, electronic, and multimedia resources regardless of their physical location or ownership. Research scientists, policy makers, and reference librarians the world over are coming together to introduce reforms to make scientific knowledge affordable. Providing access to information free of charge in electronic formats is a concept that is gaining momentum. Open Access is one step ahead of Free Access. Open Access holds promise to remove both price and permission barriers to the scientific communication by using Internet. Open access journals and Open access archives are the two vehicles. Open access archives cover Institutional Repositories.

1. Institutional Repositories

An institutional repository consists of formally organized and managed collections of digital content generated by faculty, staff and students at an institution. The content of these repositories can be available for integration with on-campus library and course management systems, and can also be made available to colleagues and students at other institutions, as well as to the general public.

A convenient definition is a “digital collection capturing and preserving the intellectual output of a single or multi-university community”. [1]

The main purposes of institutional repositories are to bring together and preserve the intellectual output of a laboratory, department, university, or other entity, the incentives and commitments to change the process of scholarly communication have also begun serving as strong motivators. Computers have been ubiquitous on campuses since the late 1980s. Students and faculty are comfortable with the power of online communication. Faculty teachers and researchers want to archive their own materials and have them available on personal or institutional Web sites, these articles, along with the development of the Internet and more powerful search engines, have enabled people to think in practical terms about the establishment of central facilities for storing, archiving, preserving, and making scholarly and artistic materials available. Repositories may be limited to one field, one department, one institution, or a

consortium of several institutions. Collaboration through a consortium reduces costs for each member through resource sharing while expanding access to digital materials.

2. Contents of an Institutional Repository

An Institutional repository may contain a variety of materials produced by the researchers of the institution like: [2]

- pre-prints of articles or research reports submitted for publication
- the text of journal articles accepted for publication
- revised texts of published work with comments from academic readers
- conference papers
- teaching materials
- student projects
- doctoral theses and dissertations
- datasets resulting from research projects
- committee papers
- computer software
- works of art
- photographs and video recordings

An institutional repository may contain work of which copyright is owned by the author or institute, or for which permission has been obtained to include a copy of the work in the repository.

3. Advantages

Academic work available on the internet is read more widely than work published in paper format. Also academic work which is available at little or no cost is read more widely than work published in expensive conventional publications. Depositing academic work in a university repository therefore increases the profile of an author on a world-wide basis, increasing both the dissemination and the impact of the research they undertake.

4. Open Source Software

Open source software is software that includes source code and is usually available at no charge. There are additional requirements besides the availability of source code that a program must meet before it is considered open source including: the software must be free to redistribute. The open source software used to create Institutional Repositories are Dspace, GNU Eprints, CDSware, Fedora, Diva, etc.

5. Institutional Repositories; State of the art

On May 10-11, 2005, the Coalition for Networked Information (CNI), the UK Joint Information Systems Committee (JISC), and the SURF Foundation in the Netherlands hosted an International conference titled "Making the Strategic Case for Institutional Repositories". The purpose of this conference was to take a broad look at the current state of deployment of Institutional Repositories (IRs) in the academic sector, and to explore how National policies and strategies were shaping this deployment. In preparation for the meeting, the organizers solicited data on institutional repository deployment from some thirteen nations: Australia, Canada, the United States and ten European countries – Belgium, France, the United Kingdom, Denmark, Norway, Sweden, Finland, Germany, Italy and the Netherlands.[3] Table No. 1 shows number of Institutional Repositories in each country and average number of open access documents.

Table 1: Institutional Repositories; State of the art in 13 countries - June 2005

Sr. No.	Country	No. of Institutional Repositories	Average No. of open access documents
1	Australia	37	Not Reported
2	Belgium	08	450
3	Canada	31	500
4	Denmark	06	Not Reported
5	Finland	01	Not Reported
6	France	23	1000
7	Germany	103	300
8	Italy	17	300
9	Norway	07	Not Reported
10	Sweden	25	400
11	The Netherlands	16	3000-12500
12	United Kingdom	31	240
13	USA	Not Reported	Not Reported

The data was collected by questionnaire method. In some of the cases the figures are not reported by the concerned authorities. It has been observed that Germany is leading country having the maximum number of Institutional Repositories followed by Australia.

The survey was also carried out to trace the open source software used by these countries to build the Institutional Repositories. The details are explored in Table No. 2. In examining the software used to support IRs, considerable variation was found in the level of software diversity from one nation to the other; looking across nations, only a few packages were used in different countries, most notably the Eprints software, which according to the respondents is used in at least 6 of the 13 countries, and DSpace, which is used in 10 of the 13 countries surveyed.

Table No. 2: Number and kind of software packages used for Institutional Repositories

Sr. No.	Country	GNU Eprints	DSpace	CDSWare	ARNO	Fedora	DIVA	iTOR	Other
1	Australia	7	3	---	---	3	---	---	24
2	Belgium	---	2	---	---	---	---	---	6
3	Canada	---	31	---	---	---	---	---	---
4	Denmark	---	2	---	---	---	1	---	3
5	Finland	---	---	---	---	---	---	---	1
6	France	11	2	---	---	---	---	---	10
7	Germany	2	2	---	---	---	---	---	99
8	Italy	7	3	1	---	---	---	---	6
9	Norway	---	1	---	---	---	1	---	5
10	Sweden	3	---	---	---	---	10	---	12
11	The Netherlands	---	6	---	6	---	---	2	2
12	UK	24	6	---	---	---	---	---	1
13	USA	---	---	---	---	---	---	---	---

6. Institutional Repositories in India

In India, the efforts towards adopting open access initiative have already been started. But there are some hurdles and misunderstandings about open access among the Indian research community. These are

- Lack of expertise in every organization to promote creation of institutional archives and encourage scientists to place their papers in them.
- Lack of infrastructural facilities like hardware and connectivity of high bandwidth
- Scientists are under the impression that the editors of renowned journals may not accept the archived papers.
- The scientists are not aware of the fact that the attitudes of the journals are now changing and renowned journals also permit the authors to archive both preprints and postprints.

Table No. 3 shows major Institutional Repositories in India

Table No. 3: Institutional Repositories in India

Sr. No.	Institutional Repository	URL	Software used	Remarks
1	Bioinformation	http://www.bioinformation.net/	Other Softwares (various) (OAI)	The journal specifically invites articles describing new biological insights based on primary or derived data. 100% freely accessible fulltext (estimate). Included in DOAJ services.
2	Digital Archive of National Institute of Technology, Rourkela Research	http://dspace.nitrkl.ac.in/dspace/	DSpace	Collects preserves and disseminates the intellectual output of NITR to the global audience. Presently, it archives journal articles, pre-prints and conference papers authored by NITR researchers. Total number of documents are 163
3	DSpace@INFLIBNET	http://dspace.inflibnet.ac.in/	DSpace	Content: postprints, preprints, news clippings, conference articles, training materials and other scholarly publications Total OAI Records: 428
4	ePrints@IIMK: Indian Institute of Management Kozhikode Scholarship Repository	http://eprints.iimk.ac.in/	GNU EPrints (OAI)	100% freely accessible fulltext (estimate)
5	ETD@IISc Electronic Theses and Dissertations at Indian Institute of Science	http://etd.ncsi.iisc.ernet.in/	DSpace (OAI)	e-Theses Total OAI Records: 140

6	Indian Institute of Information Technology	http://eprints.iiita.ac.in/	GNU EPrints (OAI)	100% freely accessible fulltext (estimate)
7	Indian Institute of Science, Bangalore, India	http://eprints.iisc.ernet.in/	GNU EPrints (OAI)	Total OAI Records: 2524
8	ISI Library, Bangalore	http://library.isibang.ac.in:8080/dspace/	DSpace (OAI)	Research Institutional or Departmental Publication database
9	Librarians' Digital Library	https://drtc.isibang.ac.in/	DSpace (OAI)	Total OAI Records: 188
10	National chemical Laboratory - Pune	http://dspace.ncl.res.in/	DSpace (OAI)	e-Theses Total OAI Records: 200
11	OpenMED@NIC	http://openmed.nic.in/	GNU EPrints (OAI)	Total OAI Records: 875
12	Rajiv Ghandi Center For Biotechnology	http://www.rgcb.res.in/	Other Softwares (various) (OAI)	e-Journal/Publication

7. Conclusion

Scientists and Librarians in developing countries like India need to aware themselves about the new opportunities provided by Information and Communication technologies. One way of doing this is to adopt the "open access" approach. Central and State Government Departments, Private Sectors, Industries, Academic Institutions and Research Institutes in India should take an initiative and come up with their Institutional Repositories so that the research in India can be widely accessed by scholarly community through out the world.

References

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